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(Hymenoptera : Ichneumonidae)

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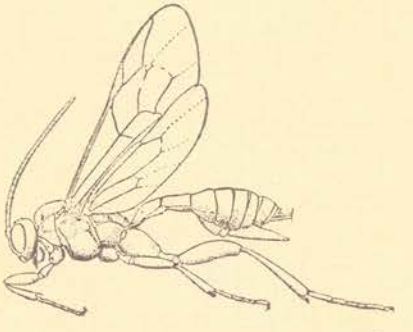

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THE TAIWAN AGRICULTURAL RESEARCH INSTITUTE

TAIPEI, TAIWAN, CHINA

THE TAIWAN ACAENITINAE

(Hymenoptera: Ichneumonidae)

by

SHUI-CHEN CHIU (邱瑞珍)*

This revisional study on the ichneumonid-flies, subfamily Acaenitinae of Taiwan has been prepared under a project supported in part by the National Council on Science Development. Part of the work was accomplished in the United States, with support of a grant from the U. S. National Science Foundation.

Twenty one species, included in 7 genera, are reported in this paper, 10 species as new to science, and one as new to Taiwan. All specimens used in this study are from the collections of the Taiwan Agricultural Research Institute, Taipei, Taiwan, and the American Entomological Institute, Ann Arbor, Michigan, U. S. A.

I wish to express my sincere thanks to the National Council on Science Development for financial assistance in making this study possible; to the U.S. National Science Foundation; to Dr. HENRY K. TOWNES, Director of the American Entomological Institute for allowing me to study his collection and for his frequent help and advice; to Mr. K. C. WU for making the drawings: and to Mr. K. C. CHOU for typing the manuscript.

Subfamily Acaenitinae

Front wing 5.0 to 19 mm. long. Face finely or densely and coarsely punctate, sometimes punctato-striate in the middle; face often with a median longitudinal carina, the carina usually short; clypeus entirely flattened or weakly convex on basal 0.6, with apical margin evenly curved or concave, thin or thicker than usual; labrum semi-circular or elliptic, exposed except in *Coleocentrus*; frons usually smooth, concave medially, with a strong median longitudinal carina that is sometimes connected to facial median carina, or in *Coleocentrus* the frons apparently not concave medially, and not smooth, usually with a few transverse striae and with or without a very weak median carina, its lower part with a groove instead of carina extending to top of face; pronotum usually with distinct wrinkles; median lobe of mesoscutum sometimes very high anteriorly, always distinctly higher than the lateral lobes; mesopleurum finely to coarsely punctate, the punctures

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sparse to dense; speculum and often nearby area and mesepisternum impunctate, but the smooth specular area in *Coleocentrus* is very small or absent; areolet usually absent; tarsal claws simple or with an acute accessary tooth; propodeal carinae often strong and numerous; abdominal sternite I usually elevated ventrally near base, the elevated area sometimes with a few long erect hairs or hooked forward; apical third or half of abdomen somewhat compressed; subgenital plate of female enlarged, triangular and folded on the midline, its apical point often reaching or surpassing apex of abdomen; ovipositor long and slender, sometimes with a few transverse ridges on, or near the tip.

Members of this tribe are parasites of insects boring in wood. There are however, very few host records.

Key to the Taiwan Genera of Acaenitinae

1. Front and middle tarsal claws simple; areolet present ..... **Coleocentrus**
   Front and middle tarsal claws with a subapical appressed tooth; areolet absent 2
2. Ventral swelling of abdominal sternite I without hairs, or rarely with one or very few hairs; intercubitus at or basad of second recurrent vein; hind tarsal claws never with an accessory tooth ..... **Yezoceryx**
   Ventral swelling of abdominal sternite I with numerous long erect hairs; intercubitus at or distad of second recurrent vein; hind tarsal claws sometimes with an accessory tooth..... 3
3. Median lobe of mesoscutum projecting strongly forward; upper tooth of mandible much shorter than lower tooth; intercubitus distad of second recurrent vein by about 0.6 its length ..... **Jezarotes**
   Median lobe of mesoscutum vertical in front or rounded off, not projecting strongly forward; upper tooth of mandible usually as long as lower tooth 4
4. Clypeus rather flat, with a subapical ridge and a thick apical margin; body entirely light yellowish brown, or black with yellow markings 5
   Clypeus with apical 0.4 somewhat depressed, without a subapical ridge and with a thin apical margin; body light yellowish brown with dark markings 6
5. Abdominal segment I broader, about 2.0 as long as apical width; punctures on hind coxa coarse and deep ..... **Metachorischizus**
   Abdominal segment I narrower, about 3.0 as long as apical width; punctures on hind coxa rather fine and shallow ..... **Spilopteron**
6. Hind tarsal claws each with an acute accessory tooth at the midlength on the mesal side; intercubitus opposite of second recurrent vein ..... **Yamatarotes**
   Hind tarsal claws simple; intercubitus distad of second recurrent vein about as far as its length ..... **Ishigakia**

Genus **Coleocentrus** GRAVENHORST

Coleocentrus GRAVENHORST, 1829. Ichneumonologia europaea 3:437.
Type: *Ichneumon excitator* PODA. Designated by WESTWOOD, 1840.
Macrocoleus DESVIGNES, 1850. Trans. Ent. Soc. London (n. s.) 1:13.
Type: (*Macrus longiventris* GRAVENHORST)=*excitator* PODA. Designated by VIERECK, 1914.

Upper and lower teeth of mandible equally long; clypeus with a very strong median subapical tubercle and apical margin not sharp; frons without a strong median longitudinal carina; notaulus deep and convergent; prepectal carina weak and incomplete, or rarely absent; propodeal spiracle located at basal 0.4 of propodeum; areolet usually present; all tarsal claws simple; ovipositor tip with a few coarse, transverse ridges.

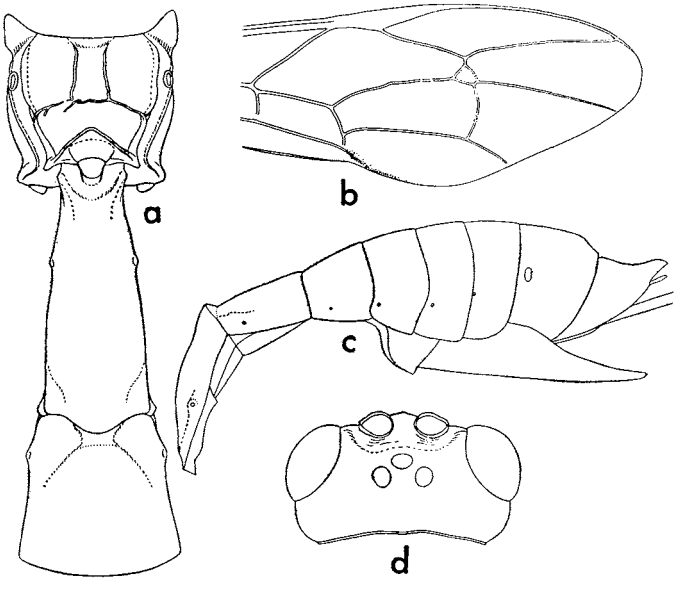

Fig. 1. *Coleocentrus alpinus*, sp. n. Propodeum and abdominal tergites I & II (a); front wing (b); abdomen (c); head (d).

Coleocentrus alpinus, new species

♀: Front wing (fig. 1, b) 15.5 mm. long. Head in dorsal view as in fig. 1, d; face very finely punctate; clypeus with about 25 hairs and very few fine punctures, separated from face by a distinct groove, its median subapical tubercle rather strong and apical margin sharp; frons flat, with a few transverse wrinkles; vertex and temple finely punctate; malar space distinctly mat; occipital carina complete above; mesoscutum near center with a median longitudinal groove that is about 0.4 as long as mesoscutum; mesopleurum densely, coarsely but shallowly punctate; prepectal carina present only ventrally; scutellum moderately convex, without a lateral carina; propodeal carinae as fig. 1, a; nervellus broken far above middle; the

fifth segment of hind tarsus much shorter than the second one; abdominal tergite I about 2.5 as long as apical width, its spiracle before middle; subgenital plate large (fig. 1, c) very finely punctate, almost reaching the apex of abdomen, about 2.5 as long as tergite II.

Black. Scape, pedicel, palpi, clypeus, face, tegula, scutellum largely, postscutellum, and legs except for black hind coxa, and blackish joint between second trochanter and femur of front and middle legs, fulvous; mandible, spot at top of eye, posterior part of lower 0.5 of temple, apical 0.4 of tergite III, most of tergite IV and the rest tergites largely, light brown to medium brown; wings faintly infuscate, venation and pterostigma black, the extreme base of pterostigma yellowish.

The name "*alpinus*" means high mountain, referring to its collecting locality.

Type: ♀, Anma, Tashehshan, 4-IV-1962, S. C. CHANG (Taipei).

Paratype: ♀, Same data as type (Taipei).

Genus **Yezoceryx** UCHIDA

Yezoceryx UCHIDA, 1928. Jour. Faculty Agr. Hokkaido Imp. Univ. 25:36.
Type: *Yezoceryx scutellaris* UCHIDA. Original designation.

Upper tooth of mandible as long as, or a little shorter than lower tooth; clypeus somewhat flattened, with a semi-circular or straight transverse subapical ridge, its median tubercle weak, strong or absent, apical margin of clypeus thick; frons always with strong longitudinal carina; notaulus deep and convergent; prepectal carina complete, or rarely interrupted near its upper end; areolet absent; intercubitus at, or basad of second recurrent vein; discoidella absent or present; nervellus broken variously, or rarely not broken; ovipositor tip with faint transverse ridges.

Key to the Taiwan Species of Yezoceryx

1. Occipitial carina concave above; body black or black with metallic blue luster; mesopleurum very coarsely and densely punctate; abdominal tergite I broader, about 2.0 to 2.3 as long as apical width 2
   Occipital carina smoothly convexly curved above; body yellowish or fulvous to blackish, with or without dark brown markings; mesopleurum mostly finely and densely punctate, very rarely coarsely and densely punctate 3
2. Occipital carina shallowly concave at the middle of dorsal part; scutellum more or less flattened in profile; basal area of propodeum longer than wide; body black with metallic blue luster ..... *purpurata* SONAN
   Occipital carina deeply concave at the middle of dorsal part; scutellum moderately convex in profile; basal area of propodeum wider than long; body black ..... *nigricans* CAMERON

3. Face black; flagellum with a broad white band; clypeus inflexed and submarginate at apex, with an obsolete tooth medially above the inflexture 4
   Face yellow or brown; flagellum with or without a broad white band; clypeus various 5
4. Inner orbit from malar furrow nearly to top of eye broadly white; basal area broader than long; hind femur light yellowish brown ..... *varicolor* CUSHMAN
   Inner orbit without white marks; basal area square; hind femur black ..... *nigricephala* SONAN
5. Flagellum beyond middle with a broad white band; tip of ovipositor sheath white 6
   Flagellum beyond middle without white band; tip of ovipositor sheath not white 7
6. Basal area much longer than wide; abdominal tergite I impunctate; hind coxa infuscate above and pale brown below ..... *intermedia* SONAN
   Basal area wider than long; abdominal tergite I distinctly punctate; hind coxa yellow, with brown to black marks ..... *choui*, n. sp.
7. Abdominal tergite I impunctate or very sparsely punctate; basal area distinctly longer than wide or wider than long 8
   Abdominal tergite I distinctly, somewhat densely punctate, at least densely punctate on medio-basal half; basal area as long as wide or wider than long 11
8. Clypeus very short, about 0.35 as long as wide; apical margin of clypeus distinctly concave; basal area much longer than wide; nervellus not broken ..... *continuus*, n. sp.
   Clypeus longer, about 0.5 as long as wide; apical margin of clypeus not concave; basal area wider than long; nervellus broken 9
9. Body brown to dark brown; ventral swelling of segment I in profile round, not hooked ..... *angustus*, n. sp.
   Body yellowish brown except mesoscutal lobes brownish; ventral swelling of abdominal segment I in profile angularly elevated or weakly hooked forward 10
10. Basal area transversely rectangular; upper 0.5 of mesopleurum impunctate; ventral swelling of abdominal segment I slightly hcoked forward ..... *flavidus*, n. sp.
    Basal area quadrate, upper 0.5 of mesopleurum not entirely impunctate, its dorsal margin also finely punctate; ventral swelling of abdominal segment I angularly elevated instead of hooked ..... *montana*, n. sp.
11. Ventral swelling of abdominal segment I in profile angularly elevated or some-

what truncated in front; temple in dorsal view roundly, slightly narrow behind the eye..... 12

Ventral swelling of abdominal segment I in profile, sharp and strongly hooked (fig. 5, g); temple in dorsal view sharply narrowed behind the eye..... 13

12. Ventral swelling of abdominal segment I in profile broadly, subtriangularly elevated (fig. 5, h); propodeum largely and dorsal half of hind coxa dark brown..... *sonani* TOWNES, TOWNES & GUPTA

Ventral swelling of abdominal segment I in profile, triangularly elevated but somewhat truncated in front (fig. 5, k); propodeum and hind coxa entirely light brown..... *townesi*, n. sp.

13. Mesopleurum very coarsely punctate on lower half; hind coxa entirely brown; median longitudinal carina of face long and strong; subapical transverse ridge of clypeus evenly transverse ..... *punctatus*, n. sp.

Mesopleurum very sparsely and finely punctate on lower half; hind coxa yellow with dark brown marks; median carina on face not present .... *isshikii* UCHIDA

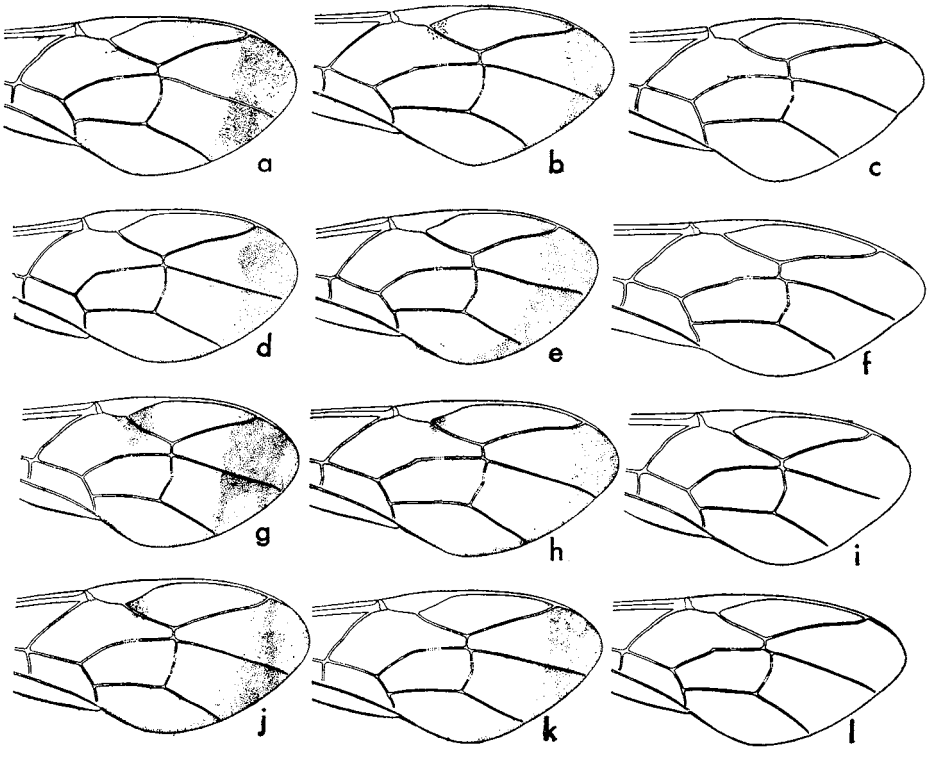

Fig. 2. Front wings of *Yezoceryx. intermedia* (a); *nigricephala* (b); *nigricans* (c); *continuus*, sp. n. (d); *flavidus*, sp. n. (e); *purpurata* (f); *sonani* (g); *choui*, sp. n. (h); *angustus*, sp. n. (i); *townesi*, sp. n. (j); *punctatus*, sp. n. (k); *montana*, sp. n. (l).

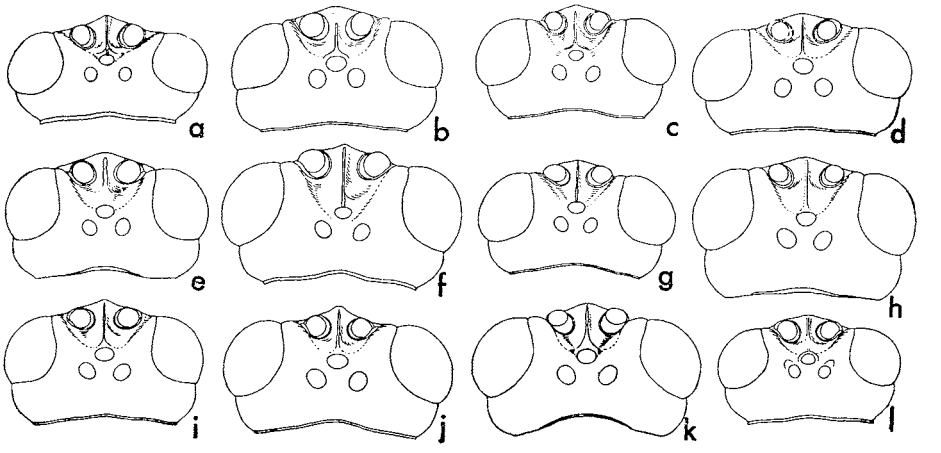

Fig. 3. Heads of *Yezoceryx*. *nigricans* (a); *montana*, sp. n. (b); *choui*, sp. n. (c); *punctatus*, sp. n. (d); *townesi*, sp. n. (e); *intermedia* (f); *nigricephala* (g); *continuus*, sp. n. (h); *flavidus*, sp. n. (i); *angustus*, sp. n. (j); *sonani* (k); *purpurata* (l).

Yezoceryx purpurata SONAN

Siphimedia purpurata SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:250. ♀. des. Type: ♀. Taiwan: Mekaran in Chikuto-gun in Shinchu (=Shinchiku) (Taipei).

Yezoceryx purpurata TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. syn.

♀: Front wing (fig. 2, f) about 14 mm. long. Head in dorsal view as in fig. 3, l; face very coarsely and densely punctate, somewhat striato-punctate in the middle; clypeus about 0.56 as long as wide, with a submarginal semi-circular ridge; temple slightly sloping posteriorly; malar space longer than basal width of mandible; occipital carina shallowly concave in dorsal part; mesopleurum distinctly coarsely punctate with subdorsal area impunctate, with a few short strong striae just below the impunctate area; intercubitus basad of second recurrent vein by about 0.6 its length; nervellus broken below the middle; propodeum as in fig. 4, i; basal area wider than long; front end of submetapleural carina broad, ear-like and punctato-striate; abdominal tergite I about 2.3 as long as wide, weakly and finely punctate, its spiracle located near the middle; ventral swelling of segment I in profile, strongly hooked as in fig. 5, f; subgenital plate extremely densely punctate, a little surpassing the apex of abdomen, about 1.75 as long as tergite II.

Black with metallic blue luster. Spot between antennal socket and eye brown; wings infuscate, the front wing darker than hind wing; pterostigma black; venation brown to black.

Specimens: ♀, Fenchihu (=Funkiku), 27-IV-1931, T. SHIRAKI (Taipei); ♀ (SONAN's type), Mekaran (an aboriginee village in Shinchu), 20-VIII-1928, J. SONAN (Taipei).

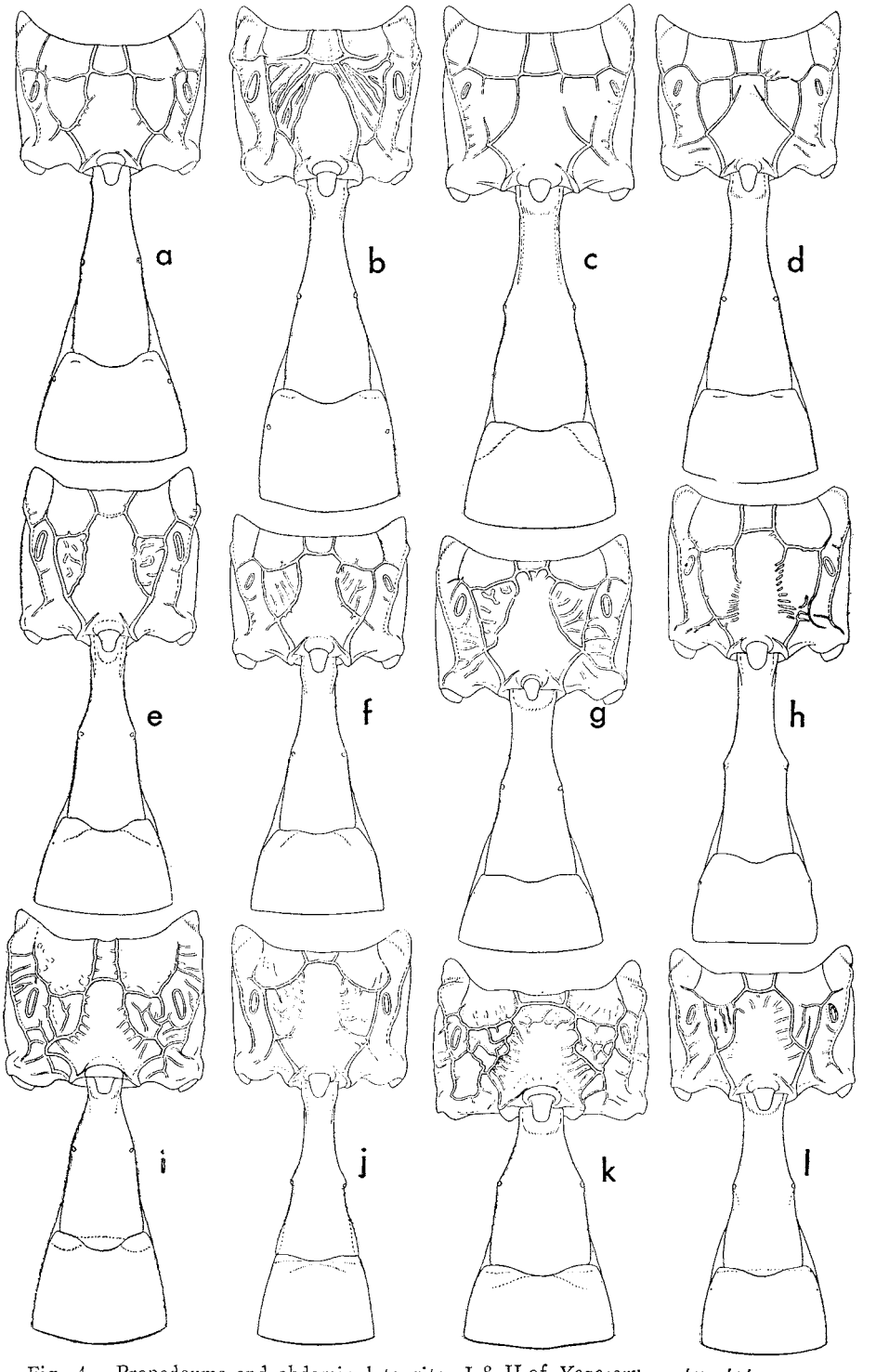

Fig. 4. Propodeums and abdominal tergites I & II of *Yezoxeryx*. *punctatus*, sp. n. (a); *montana*, sp. n. (b); *intermedia* (c); *continuus*, sp. n. (d); *choui*, sp. n. (e); *townesi*, sp. n. (f); *sonani* (g); *nigricephala* (h); *purpurata* (i); *flavidus*, sp. n. (j); *nigricans*, (k); *angustus*, sp. n. (l).

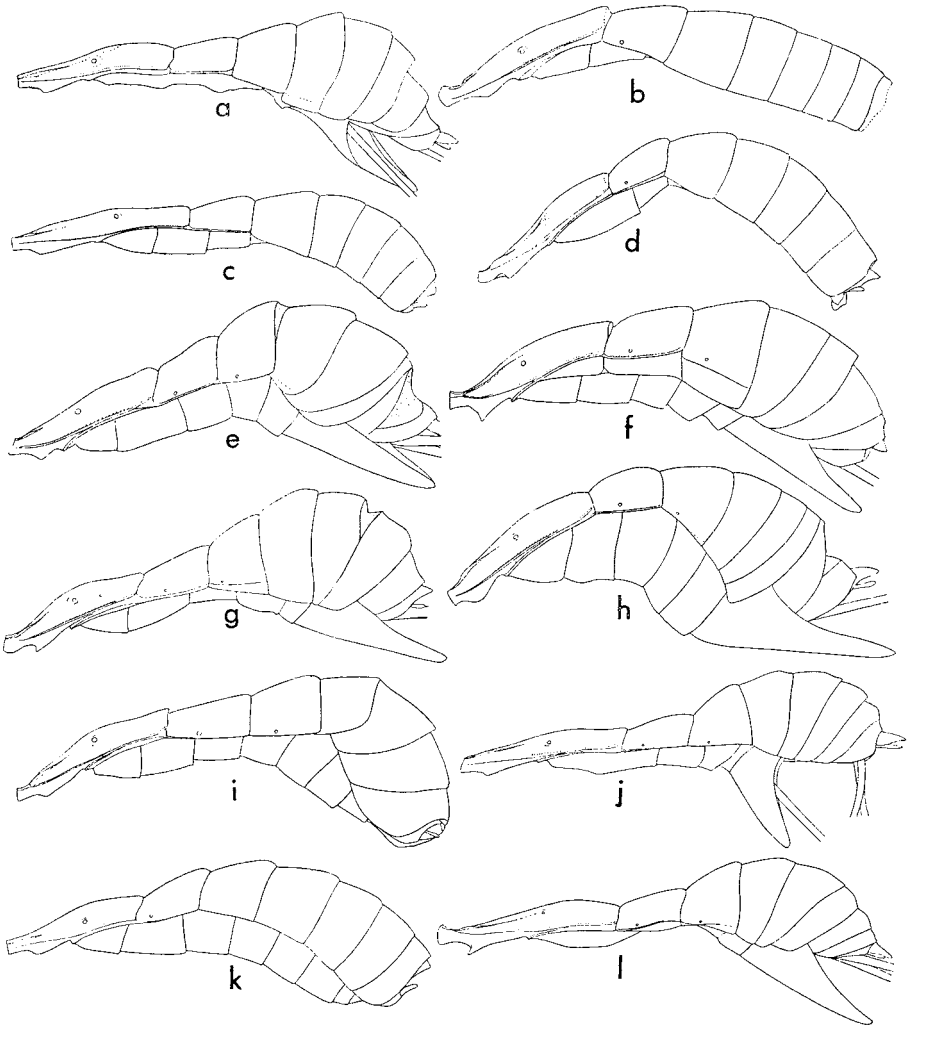

Fig. 5. Abdomens of *Yezoceryx*. *choui*, sp. n. (a); *angustus*, sp. n. (b); *continuus*, sp. n. (c); *flavidus*, sp. n. (d); *nigricans* (e); *purpurata* (f); *punctatus*, sp. n. (g); *sonani* (h); *montana*, sp. n. (i); *intermedia* (j); *townesi*, sp. n. (k); *nigricephala* (l).

Yezoceryx nigricans CAMERON

Macrogaster nigricans CAMERON, 1899. Mem. & Proc. Manchester Lit. Phil. Soc. 43(3):194. ♀. key, des. Lectotype: ♀, India: Khasi Hills in Assam (London).

Macrogaster nigricans MORLEY, 1913. Fauna of British India.....Hymenoptera 3(1):27. ♂, ♀. key, des., fig. India: Khasi Hills in Assam. Malaya: Penang.

Siphimedia nigra CUSHMAN, 1933. Insecta Matsumurana 8:13. ♀. key, des. Type: ♀, Taiwan: Fengshan (= Hozan) (Friedrichshagen). New syn.

Siphimedia nigra UCHIDA, 1934. Insecta Matsumurana 9:52. key, syn.

Yezoceryx nigricans TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. syn.

♀: Front wing (fig. 2, c) about 14 mm. long. Head in dorsal view as in fig. 3, a; face very coarsely and densely punctate, strongly punctato-striate in the middle; clypeus about 0.59 as long as wide, with strong transverse submarginal ridge which forms an obtuse point at the middle; median longitudinal carina on face strong and long; malar space longer than basal width of mandible; temple sharply sloping backward in dorsal view; occipital carina deeply concave in dorsal part; mesopleurum punctate as in *purpurata* but without a row of short striae between punctate and impunctate areas; submetapleural carina shaped as in *purpurata* but punctate only; intercubitus opposite second recurrent vein; nervellus broken near the middle; basal area of propodeum (fig. 4, k) longer than wide; abdominal tergite I about 2.0 as long as apical width, weakly, finely punctate, with spiracle near the middle; ventral swelling of segment I hooked in profile (fig. 5, e); subgenital plate distinctly finely punctate, surpassing the apex of abdomen, about 2.1 as long as tergite II.

Black. Lateral side of face yellowish and brownish; wings infuscate with front wing darker than hind wing; pterostigma and venation brown to black.

Specimens: ♀, Hwalien (=Karenko), 29-VII-1922, M. MIYAKE (Taipei); 2♀, Shinchu (=Shinchiku), 1 to 30-VII-1918, J. SONAN & K. MIYAKE (Taipei).

Yezoceryx varicolor CUSHMAN

Siphmedia varicolor CUSHMAN, 1933. Insecta Matsumurana 8:14, ♀, key, des, Type: ♀, Taiwan: Chiasenpu (= Kosempo) (Friedrichshagen).
Siphimedia varicolor UCHIDA, 1934. Insecta Matsumurana 9:52. key.
Yezoceryx varicolor TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. syn.

"Female — Length 8 mm.; antennae 7 mm.; ovipositor 9 mm.

"Face much broader than frons, densely punctate, slightly elevated medially and with a short median carina above continuous with the frontal carina; clypeus broadly and shallowly separated, coarsely and sparsely punctate, reflexed and submarginate at apex with an obsolete tooth medially above the inflexure; malar space subequal to basal width of mandible; cheeks sparsely punctate; temples more finely and sparsely so; vertex medially and frons laterally densely, finely punctate opaque, otherwise polished; ocelli slightly inset; occipital carina subangulate medially. Pronotum finely and sparsely punctate above, polished below, foveolate in impression; mesoscutum finely, opaquely punctate, prescutum gibbous medially impressed in front, notaulus finely foveolate; scutellum finely and rather sparsely punctate, shining, lateral carinae extending to middle, fovea foveolate; mesosternum and pleurum punctate, pleurum more sparsely so and with a very large polished speculum; metapleurum rather densely and finely punctate; propodeum laterally with a few rugae, petiolar area medially polished, basal area broader than long, areola not defined; second recurrent vein interstitial, nervulus slightly

antefurcal, nervellus broken at middle; hind coxa and femur punctate, femur not especially stout, fully three times as long as thick. Abdomen polished throughout; first tergite rather flat above, with distinct basal impression and lateral carinae extending to spiracles, sternite nearly flat; hypopygium extending barely to apex of abdomen.

"Black, inner orbits from malar furrow nearly to top of eyes broadly white; mandibles and apex of clypeus whitish; antennae black, scape testaceous beneath, flagellum with a broad white annulus just beyond middle; tegulae, wing bases, scutellar area, apex of metapleurum, and propodeum apically and medially nearly to base stramineous to pale testaceous; wings pale yellowish hyaline, infumate at apex, venation blackish; front and middle legs pale testaceous, their coxae except at extreme base and their trochanters stramineous, the middle femur brownish above; hind coxa black, its apex and the basal joint of trochanters stramineous, femur and apical joint of trochanter testaceous, more or less piceous above, tibia and tarsus fuscous, tibia paler at base; first tergite at apex broadly, second to fifth narrowly and less conspicuously reddish, apical tergite and the broad membrans between the sixth and very narrow seventh whitish; sheath with a whitish annulus near apex.

"Type-locality—Kosempo, Formosa.

"One female."

Yezoceryx nigricephala SONAN

Siphimedia nigricephala SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:417. ♀. des. Type: ♀, Taiwan: Tienwan, Lotung (=Tamaru, Rato-gun) (Taipei).

Yezoceryx nigricephala TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. syn.

♀: Front wing (fig. 2, b) about 7.0 mm. long. Head in dorsal view as in fig. 3, g; face coarsely punctate, without a medium carina; clypeus about 0.5 as long as wide, its apical margin slightly sinuate, its subapical transverse ridge strong, with a strong tubercle at the middle; malar space about equal to basal width of mandible; temple in dorsal view, roundly curved; occipital carina evenly curved in dorsal part; mesopleurum impunctate; intercubitus basad of second recurrent vein by about 0.3 its length; nervellus broken slightly above the middle; propodeum as in fig. 4, h, with basal area square; abdominal tergite I about 2.5 as long as apical width with very few punctures on the latero-apical 0.5 area; ventral swelling of abdominal segment I convex in profile (fig. 5, l); subgenital plate beyond abdominal apex, about 2.2 as long as tergite II.

Brown. Antenna entirely brown except for a white mark beyond middle; mandible except teeth brown, apical margin of clypeus, tegula, apical 0.4 of scutellum, postscutellum, lateral extensions of scutellum and postscutellum, apical 0.3 of petiolar area, front and middle legs, hind coxa except extreme apex and

hind trochanters, yellow to fulvous; abdominal tergites brown, with apical margin of each tergite light fulvous; subgenital plate entirely fulvous; ovipositor sheath dark brown with apical part whitish; wings hyaline with apical margin infuscate; pterostigma and veins dark brown.

Specimen: ♀ (SONAN's type), Tienwan, Lotung (=Tamaru, Rato), 1-IX-1923, J. SONAN (Taipei).

Yezoceryx intermedia SONAN

Siphimedia intermedia SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:418. ♀. des. Type: ♀, Taiwan: Pahsienshan (=Hassenzan) (Taipei).
Yezoceryx intermedia TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. syn.

♀: Front wing (fig. 2, a) about 6.0 mm. long. Head in dorsal view as in fig. 3, f; face densely punctate, punctato-striate in the middle; clypeus about 0.4 as long as wide, its apical margin divided into 3 lobes, of which the middle one is tooth-like; malar space about 1.25 as long as basal width of mandible; temple in dorsal view, distinctly sloping posteriorly; occipital carina evenly curved in dorsal part; mesopleurum largely impunctate, the lower 0.25 very weakly and finely punctate; intercubitus basad of second recurrent vein by about 0.8 its length; nervellus broken above the middle; propodeum as in fig. 4, c, basal area much longer than wide; abdominal tergite I entirely impunctate, about 2.5 as long as apical width; ventral swelling of abdominal segment I rounded in profile (fig. 5, j); subgenital plate short, not surpassing the apex of abdomen, about 1.5 as long as tergite II.

Dark brown to black. Antenna blackish except scape in front yellow and flagellum with a white band beyond the middle; head yellow except mandibular teeth, frons, vertex, tinge on temple, and upper half of occiput, brown to dark brown; thorax more or less reddish brown except scutellum and postscutellum yellow; abdomen reddish brown with basal 0.5 somewhat darker; front and middle legs yellow; wings hyaline, with apical margins infuscate; pterostigma and veins black; ovipositor sheath blackish except subapical region white.

Specimen: ♀ (SONAN's type), Pahsienshan (=Hassenzan), 28-VIII-1929, S. ISSIKI and T. YOSHIDA (Taipei).

Yezoceryx choui, new species

♀: Front wing (fig. 2, h) about 8.8 mm. long. Head in dorsal view as in fig. 3, c; face densely punctate; clypeus about 0.55 as long as wide, its subapical transverse ridge strong, with a moderately strong tubercle at the middle; malar space subequal to basal width of mandible; temple, in dorsal view, narrow distinctly sloping backward; occipital carina evenly curved in dorsal part; mesopleurum sparsely finely punctate except specular area impunctate; intercubitus opposite second recurrent vein; nervellus broken at middle; propodeum as in fig.

4, e, basal area wider than apical width; abdominal tergite I about 2.0 as long as apical width, distinctly, densely punctate on lateral area; swelling of abdominal segment I angulate in profile (fig. 5, a), slightly hooked forward; subgenital plate hardly surpassing the apex of abdomen, about 1.85 as long as tergite II.

Yellowish brown. Antenna blackish brown with white spot beyond middle; scape and pedicel pale yellowish brown; mandibular teeth, frons medially, ocellar area, transverse band behind ocelli and extending to hind margin of vertex, 3 mesoscutal stripes, a round spot near lower posterior margin of mesopleurum, obscure mark on first lateral area of propodeum, marks on baso-dorsal 0.5 and baso-lateral part of hind coxa light brown to dark brown; abdomen reddish brown, the basal 0.5 to 0.65 of tergite I, basal 0.6 of tergite II, and basal 0.3 of tergites III and IV, blackish; ovipositor sheath infuscate except that tip area is white; wings yellowish with apical margin of front wing infuscate and basal angle of radial cell blackish; pterostigma and venation dark brown to black.

The name "*choui*" is for Mr. KEN-CHING CHOU who assisted with the collection of the specimen.

Holotype: ♀, Sun-moon lake, 28-IV-1969, Malaise trap (Taipei).

Yezoceryx continuus, new species

♂: Front wing (fig. 2, d) about 6 mm. long. Head in dorsal view as in fig. 3, h; face finely punctate; clypeus very short, about 0.36 as long as apical width, its apical margin distinctly concave; subapical transverse ridge on clypeus also concave, with a strong, median tubercle; malar space subequal to basal width of mandible; temple in dorsal view swollen behind the eye; occipital carina evenly curved in dorsal part; mesopleurum very finely and sparsely punctate except that specular area is impunctate; intercubitus opposite second recurrent vein; nervellus not broken, the discoidella weak and disconnected; propodeal carinae as in fig. 4, d; basal area much longer than wide; abdominal tergite I about 2.0 as long as apical width, almost impunctate, with very few fine and sparse punctures; ventral swelling of abdominal segment I roundely elevated in profile (fig. 5, c), with a few distinct wrinkles in front of the elevation.

Fulvous. Basal 0.5 of flagellum infuscous; mandibular teeth, frons except laterally, vertex, thorax entirely, hind coxa, hind trochanters, extreme base of hind femur, and hind tarsus, brown to dark brown; abdomen reddish brown except posterior margins of tergites I to IV yellowish; wings hyaline, apical margin of front wing infuscate, pterostigma and veins brown.

The name "*continuus*" means unbroken, referring to the unbroken nervellus.

Holotype: ♂, Alishan (=Arisan), 2-X-1923, J. SONAN & M. YOSHINO (Taipei).

Yezoceryx angustus, new species

♂: Front wing (fig. 2, i) about 6 mm. long. Head in dorsal view as fig. 3, j; face strongly coarsely punctato-striate; clypeus about 0.55 as long as apical width, its subapical transverse ridge evenly straight, with a flat, triangular tubercle in the middle; malar space subequal to basal width of mandible; temple in dorsal view narrow, gradually sloping posteriorly; occipital carina evenly curved in dorsal part; lower 0.4 of mesopleurum with irregular sized punctures; propodeum as fig. 4, l; basal area wider than long; combined areola and petiolar area medially smooth, wrinkled along lateral and front edges; intercubitus opposite second recurrent vein; nervellus broken at middle; abdominal tergite I about 2.26 as long as apical width, almost impunctate, with only about three punctures visible; ventral swelling of abdominal segment I round and low in profile (fig. 5, b).

Reddish brown. Mandibular teeth, face, frons except laterally, vertex, thorax except tegula, mesepimeron, scutellum, postscutellum, latero-apical 0.3 and medio-apical 0.6 of propodeum, hind coxa largely, and joint between hind tibia and femur, dark brown; wings hyaline, apical margin of front wing infuscate, pterostigma and veins dark brown.

The name "*angustus*" means narrow, referring to its narrow temple.

Holotype: ♂, Hwalien (=Karenko), 20-VII to 4-VIII-1919, T. OKUNI, J. SONAN, K. MIYAKE and M. YOSHINO (Taipei).

Yezoceryx flavidus, new species

♂: Front wing (fig. 2, e) about 7 mm. long. Head in dorsal view as in fig. 3, i; face coarsely and densely punctate, somewhat striate in middle; clypeus about 0.5 as long as wide with about 4 longitudinal distinguishable striae; apical margin weakly rounded, with a distinct median tubercle; malar space subequal to basal width of mandible; temple in dorsal view gradually sloping backward; occipital carina evenly curved in dorsal part; lower 0.4 of mesopleurum moderately densely punctate, the rest part almost impunctate; propodeum as in fig. 4, j; basal area about 2.0 as wide as long; combined areola and petiolar area impunctate, but their inner lateral margin with distinct wrinkles; intercubitus basad of second recurrent vein; nervellus broken at middle; abdominal tergite I about 2.22 as long as apical width, with very few fine punctures; ventral swelling of abdominal segment I slightly hooked forward in profile (fig. 5, d).

Yellowish brown. Head brown except mandibular teeth dark brown; apical margin of clypeus and lateral part of frons light brown; 3 mesoscutal stripes, extreme base of hind femur, apical 0.66 of hind tibia, and hind tarsus dark brown; wings hyaline, apical margin of front wing infuscate, pterostigma and venation brown.

The name "*flavidus*" means yellow, referring to its body color.

Holotype: ♂, Shinchu (=Shinchuku), 1 to 30-VII-1918, J. SONAN and K. MIYAKE (Taipei).

Yezoceryx montana, new species

♂: Front wing (fig. 2, l) about 10 mm. long. Head in dorsal view as in fig. 3, b; face coarsely and densely punctate, with a median longitudinal carina; clypeus about 0.5 as long as wide, coarsely sparsely punctate, its apical margin somewhat truncate, without a distinct median tubercle; malar space about 0.68 as long as basal width of mandible; occipital carina evenly curved in dorsal part; mesopleurum finely to moderately punctate except specular area impunctate; intercubitus basad of second recurrent vein by about 1.0 its length; nervellus broken at the middle; propodeum as in fig. 4, b, its basal area quadrate; abdominal tergite I about 2.5 as long as apical width, largely smooth except its middle part finely punctate; ventral swelling of abdominal segment I angularly elevated in profile (fig. 5, i).

Fulvous. Antennae missing. Mandibular teeth and extreme base of hind femur dark brown.

The name "*montana*" means mountain, referring to the fact that the collecting locality was a mountain.

Holotype: ♂, Pahsienshan (=Hassenzan), 8-VI-1941, J. SONAN (Taipei).

Yezoceryx sonani TOWNES, TOWNES & GUPTA

Siphimedia scutellaris SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:416. ♀. Name preocc. in *Yezoceryx* by UCHIDA, 1926. des. Type: ♀. Taiwan: Taipingshan (Taipei). Taiwan: Tienwan, Lotung (=Tamaru, Rato-gun).

Yezoceryx sonani TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:326. New name.

♀: Front wing (fig. 2, g) about 6.4 mm. long. Head in dorsal view as in fig. 3, k; face coarsely moderately densely punctate, slightly elevated with a short median carina connected with frontal median carina; clypeus sparsely, coarsely punctate, about 0.64 as long as wide; its apical margin somewhat transverse, subapical transverse ridge strong; malar space about 1.2 as long as basal width of mandible; temple in dorsal view rounded and slightly narrow behind the eye; occipital carina evenly curved in dorsal part; mesopleurum impunctate except lower 0.3 weakly punctate; intercubitus almost interstitial of second recurrent vein; nervellus broken at middle; propodeum (fig. 4, g) strongly carinate, distinctly wrinkled except petiolar area concave and smooth with only 2 or 3 short carinae connected with basal transverse carina; abdominal tergite I about 2.0 as long as apical width, sparsely finely punctate except apically middle impunctate; ventral swelling of abdominal segment I rounded in profile (fig. 5, h); subgenital plate beyond abdominal apex, about 3.0 as long as tergite II.

Brown to dark brown. Head yellow except mandibular teeth dark brown; frons (lower medial 0.5 yellow), vertex, upper parts of occiput and temple, and antenna

entirely, brown; mesopleurum largely dark brown; propodeum brown except apical 0.33 light brown; the rest parts of thorax light brown; legs light brown, dorsal part of hind coxa, joint between trochanter and femur, dorsal part of hind femur and hind tibia, brownish to brown; abdominal tergites light brown except basal 0.75 of tergite I and basal 0.69 of tergite II, dark brown.

Specimens: ♀, (SONAN's type), Taipingshan (=Taiheizan), 26-VIII-1929; ♀, Tienwan, Lotung (=Tamaru, Roto-gun), 1-IX-1923, J. SONAN (Taipei).

Yezoceryx townesi, new species

♂: Front wing (fig. 2, j) about 7.4 mm. long. Head in dorsal view as in fig. 3, e; face shallowly, coarsely, sparsely punctate, its middle part somewhat punctato-striate; clypeus about 0.5 as long as wide, its apical margin with a weak median tubercle; temple in dorsal view rounded, very slightly sloping posteriorly; mesopleurum sparsely, finely punctate; intercubitus very slightly basad of second recurrent vein; nervellus broken at middle; propodeum as fig. 4, f, its basal area square, petiolar area smooth, rugoes laterally; tergite I about 2.8 as long as apical width, with distinct fine punctures crowded in center and sparsely scattered in apico-lateral area: ventral swelling of abdominal segment I roundly elevated in profile (fig. 5, k).

Yellowish brown. Antenna infuscate, scape in front yellowish, flagellum broken off beyond second segment; head yellow except frons medially light brownish; ocellar area, vertex, upper 0.4 of occiput and mandibular teeth brown to dark brown; 3 mesoscutal stripes and speculum brownish; scutellum, postscutellum, and front and middle legs, yellow, the joint between trochanter and femur of hind leg dark brown; last segment of hind tarsus blackish; abdomen reddish brown except basal 0.4 and apical 0.3 of tergite I, and rest of the abdominal tergites more or less stained with brown; wings hyaline with apical margins and a mark below pterostigma infuscate; pterostigma and veins blackish.

The name "*townesi*" is in honor of Dr. HENRY K. TOWNES.

Holotype: ♂, Sakahen (S. W. of Hwalien), 16-VII-1934, J. L. GRESSITT (TOWNES).

Paratype: ♂, Kaotzufu (=Kusukusu), 20-IV-1928, J. SONAN (Taipei).

Yezoceryx punctatus, new species

♀: Front wing (fig. 2, k) about 6.2 mm. long. Head in dorsal view as in fig. 3, d; face densely transversely striato-punctate, its median longitudinal carina long and distinct, nearly reaching clypeus; clypeus about 0.5 as long as wide, with a subapical transverse ridge, without a distinct median tubercle; malar space subequal to basal width of mandible; temple in dorsal view, slightly sharply sloping backward; occipital carina evenly curved in dorsal part; mesopleurum coarsely and densely punctate; propodeum as fig. 4, a; basal area trapezoid shaped, about as long as wide; combined

areola and petiolar area laterally weakly rugose; intercubitus basad of second recurrent vein by 0.5 its length; tergite I about 2.5 as long as apical width, densely punctate; ventral swelling of abdominal segment I strongly hooked forward in profile (fig. 5, g); subgenital plate apparently surpassing the apex of abdomen about 2.24 as long as tergite II.

Reddish brown. Mandible except mandibular teeth dark brown; lateral margin of frons, apical 0.4 of scutellum, most of postscutellum, front leg, middle leg except coxa, apical margins of all abdominal tergites, basal corner of tergite II, and apex of abdomen, yellowish; wings hyaline, apical margin of front wing infuscate; pterostigma and venation light brown.

The name "*punctatus*" means punctured, referring to the densely and coarsely punctate mesopleurum.

Holotype: ♀, Dagoshan (=Takaoyama), 13-VII-1932, J. SONAN (Taipei).

Yezoceryx isshikii UCHIDA

Yamatarotes isshikii UCHIDA, 1929. Insecta Matsumurana 3:181. ♀. des. Lectotype: ♀, Japan: Sanjogadake (=Sanjôzan) in Nara (=Yamato) (Sapporo).
Siphimedia issiki (!) UCHIDA, 1934. Insecta Matsumurana 9:51. ♂, ♀. key. Japan: Sanjogadake in Nara; Yakushima Is. in Kagoshima. Lectotype designation.
Siphimedia isshikii YASUMATSU, 1934. Mushi 7:67. ♂, ♀. Japan: Yakushima Is. in Kagoshima.
Yamatarotes isshikii MEYER, 1934. Tables systématiques des hyménoptères parasites (fam. Ichneumonidae de l'URSS et des pays limitrophes 3:271. ♀, key, des. Japan.
Yezoceryx isshikii IWATA, 1958. Acta Hymenopterologica 1:73. des. of ovarian egg, fig. Japan: Hakusan in Ishikawa.
Yezoceryx isshikii IWATA, 1960. Acta Hymenopterologica 1:151. des. of ovary & egg, fig. Japan: Hakusan in Ishikawa.

♂: Front wing about 7.5 mm. long. Face densely punctate, middle area punctatostriate; clypeus about 0.5 as long as wide, without subapical transverse ridge, its apical margin faintly concave with a median tubercle but not strong; malar space subequal to basal width of mandible; temple in dorsal view, gradually sloping posteriorly; occipital carina evenly curved in dorsal part; mesopleurum very sparsely punctate except its upper 0.25 to 0.5 impunctate and its anterior margin striate; intercubitus basad of second recurrent by about 0.5 its length; nervellus broken slightly above middle; basal area of propodeum wider than long; abdominal tergite I about 2.0 as long as apical width, distinctly densely punctate on basomedial area; ventral swelling of abdominal segment I distinctly hooked forward.

Fulvous. Antenna entirely blackish except scape yellow in front; mandibular teeth, frons, vertex, temple except a yellow stripe behind eye, mesoscutum almost entirely, hind dorsal corner of pronotum, upper 0.5 of mesopleurum, 2 marks on mesosternum, upper front corner of metapleurum, depression in front of scutellum,

propodeum except spiracle, petiolar area and apical part of second pleural area, yellow; obscure marginal band on prepectus, hind coxa except ventral and apico-lateral side, hind trochanters, hind femur largely, hind tibia and tarsal segments light brown to dark brown; abdomen reddish brown with apical 0.25 to 0.55 of tergite I, basal 0.6 of tergite II, basal 0.3 of tergite III and baso-central part of tergites IV to VI dark brown; wings hyaline with apical margin infuscate, pterostigma and veins dark brown.

Specimen: ♂, Taipingshan (=Taiheizan), 9-VII-1934, J. L. GRESSITT (TOWNES).

This specimen was compared with UCHIDA's type of *isshikii* by Dr. HENRY K. TOWNES in 1954.

Genus **Jezarotes** UCHIDA

Jezarotes UCHIDA, 1928. Jour. Faculty Agr. Hokkaido Imp. Univ. 25:30.
Type: *Jezarotes tamanukii* UCHIDA. Original designation.

Upper tooth of mandible much shorter than lower tooth; clypeus with a weak median subapical tubercle, its apical margin not sharp; middle lobe of mesoscutum projecting strongly forward; notaulus deep, strongly convergent; prepectal carina complete; areolet absent; intercubitus distad of second recurrent vein by a little more than its length; nervellus broken above the middle; front and middle tarsal claws with an accessory tooth, hind claws simple; ovipositor tip slender, with a few weak transverse ridges.

Jezarotes apicalis SONAN

Siphimedia apicalis SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:415. ♀. des. Type: ♀. Taiwan: Hwalien, 1000-3000 m. (Taipei).
Jezarotes apicalis TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:324.

♀: Front wing (fig. 6, b) about 12 mm. long. Head as in fig. 6, d; face distinctly coarsely punctate, its upper 0.4 with a strong median carina continuous with frontal longitudinal median carina; clypeus somewhat flattened, distinctly punctate, about 0.5 as long as wide, not separated from face by a furrow; vertex with very few shallow punctures; temple broad, indistinctly punctate, rather broad behind eye; malar space about 0.85 as long as basal width of mandible; median lobe of mesoscutom finely punctate, very distinctly convex and truncate anteriorly, with a distinct longitudinal median groove; lateral lobes of mesoscutum elevated, sparsely and very finely punctate; mesopleurum coarsely densely punctate except specular area impunc-

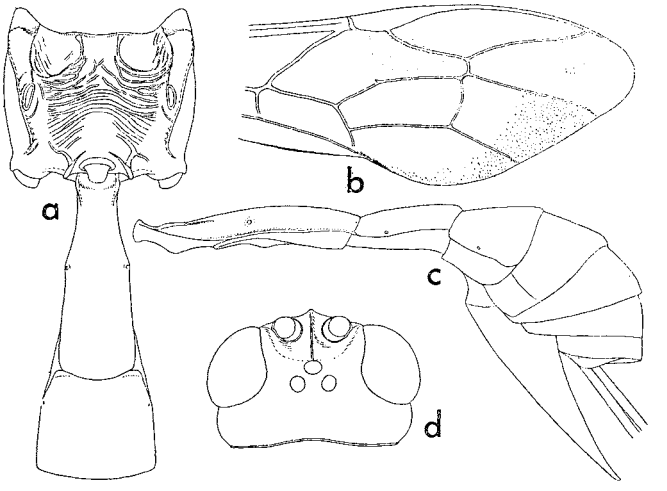

Fig. 6. *Jezarotes apicalis* SONAN. Propodeum and abdominal tergites I & II (a); front wing (b); abdomen (c); head (d).

tate; scutellum quadrate, weakly convex, its lateral carina present only on basal 0.3; propodeum as in fig. 6, a, propodeal carinae broad, distinct but comparatively low; abdominal tergite I about 0.57 as long as its apical width, with spiracle a little before the middle; ventral swelling of abdominal segment I in profile as in fig. 6, c; subgenital plate reaching far beyond abdominal apex.

Dark brown to black. Antenna dark brown except for a whitish part beyond the middle; mouth parts except mandibular teeth blackish; clypeus except basal margin, face except median 0.4, facial, frontal and temporal orbits, temple (lower posterior margin black), malar space, anterior margin and hind corner of pronotum, lateral margin of mesoscutum, tegula, dorsal margin of mesopleurum, scutellum postscutellum, apical part of propodeum, and longitudinal stripe on metapleurum, yellow; legs yellow except hind coxa brown with dorsal part yellow, and joint between trochanter and femur of hind leg brown; with a subquadrate spot on the apex of tergite I, transverse rectangular mark on tergites II and III, posterior margin of its following tergites, and subgenital plate except submedian line (blackish), yellow; ovipositor sheath entirely dark brown; wings hyaline, a spot below pterostigma and apical margin of front and hind wings, brownish.

Specimens: ♀ (SONAN's type), Hwalien (=Karenko), 20-VII to 4-VIII-1919 (altitude 1000-3000 m.), T. OKUNI, J. SONAN, K. MIYAKE & M. YOSHINO (Taipei).

Genus **Metachorischizus** UCHIDA

Metachorischizus UCHIDA, 1928. Jour. Faculty Agr. Hokkaido Imp. Univ. 25:35. Type: *Metachorischizus unicolor* UCHIDA. Original designation.

Very similar to *Spilopteron* but differs from that genus in having notaulus broader and with numerous strong transverse ridges, these meeting in a rugose area at

hind end of notaulus; abdominal segment I broader, about 2.0 as long as apical width; propodeum coarsely wrinkled, without distinct carinae; intercubitus basad of second recurrent vein; nervellus broken at middle.

Metachorischizus rufus CUSHMAN

Siphimedia rufus CUSHMAN, 1933. Insecta Matsumurana 8:12. ♀. key, des. Type: ♀, Taiwan: Tapulin (=Taihorin) (Friedrichshagen).
Siphimedia lutea f. *rufa* UCHIDA, 1934. Insecta Matsumurana 9:52. key, Taiwan: Fengshan.
Siphimedia lutea SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:294. ♂, ♀. Taiwan: Hsiaolin in Lotung (=Kobayashi in Ratôgun); Shinchu (=Shinchuku); Hwalien (=Karenku), 1000-3000 m.; Hwalien, 1000 m.; Suiyuan (=Suigen), 1500 m., Suigen (=Suôgun). (in part).
Metachorischizus rufus TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:325.

♀: Front wing (fig. 7, d) about 15.8 mm. long. Head in dorsal view as fig. 7, c; face densely, coarsely striato-punctate; clypeus sparsely coarsely punctate except apical 0.3 impunctate or sparsely punctate; clypeus about 0.55 as long as wide, separated from face by a low transverse ridge, its apical median tubercle weak but present and its apical margin sinuate; exposed portion of labrum about 0.4 as long as wide; vertex and temple with sparse irregular sized punctures; mesopleurum coarsely and

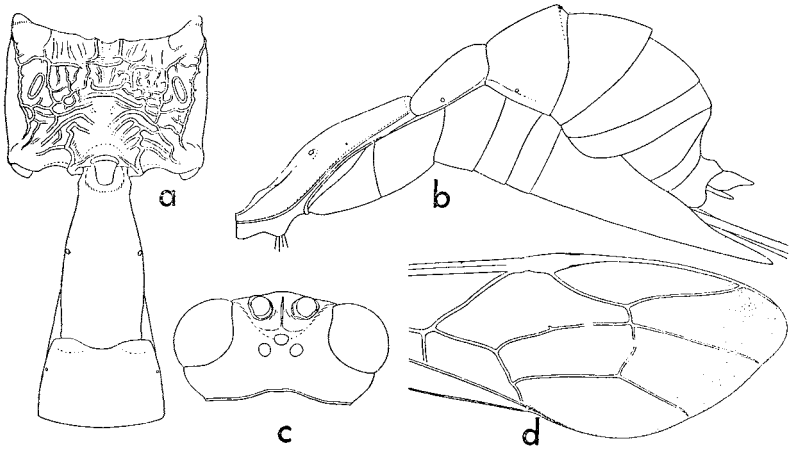

Fig. 7. *Metachorischizus rufus* CUSHMAN. Propodeum and abdominal tergites I & II (a); abdomen (b); head (c); front wing (d).

densely punctate; scutellum moderately, densely punctate, its apical 0.3 striato-punctate with strong lateral carina extending to apical 0.4; propodeum coarsely wrinkled as fig. 7, a; tergite I broad and short with shallow sparse to moderately dense punctures except middle and apex impunctate; ventral swelling of abdominal segment I (fig. 7, b) convex in profile, with numerous long hairs; tergite I and following tergites finely and densely punctate; subgenital plate finely and moderately densely punctate, surpassing the abdominal apex, about 3.1 as long as tergite II; ovipositor tip with a few obscure transverse ridges.

Fulvous. Mandibular teeth, scape dorsally, basal 0.33 and apical 0.33 of flagellum

dorsally, basal 0.65 of abdominal tergite I, baso-lateral part of tergite II, and the joint between hind trochanter and its femur pale brown to dark brown; tarsal segments of hind leg brown to dark brown with apical margin a little paler; wings yellowish brown, apical margin of front wing slightly infuscate veins dark brown, pterostigma fulvous.

Specimens: 6♀, Taipei (=Rahau, Taihoku), 13-VII-1939, J. SONAN (Taipei and TOWNES); ♀, Wulai (=Urai), VI-1931, J. SONAN (Taipei).

Genus **Spilopteron** TOWNES

Spilopteron TOWNES, 1960. U. S. Natl. Mus. Bul. 216(2):568. Type: *Spilopteron franclemonti* TOWNES. Original designation.

Upper tooth of mandible a little shorter than lower tooth; clypeus with a strong transverse subapical ridge, with or without a weak median tubercle, its apex sinuate, not sharp; frons with a strong longitudinal median carina; notaulus deep and convergent; prepectal carina present; propodeal carinae distinct, the course of the carinae normal; areolet absent, intercubitus opposite second recurrent vein, nervellus broken at, or a little above the middle; front and middle tarsal claws with an accessory tooth, hind claws simple; abdominal segment I narrow, about 3.0 as long as apical width; ovipositor slender, with a few transverse ridges near tip.

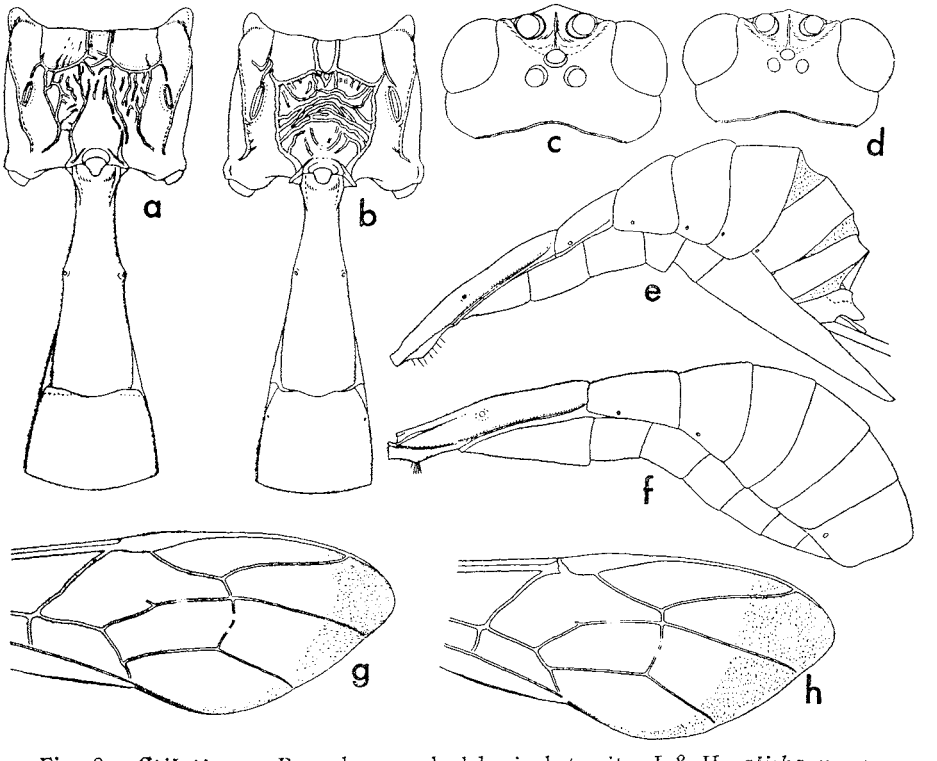

Fig. 8. *Spilopteron*. Propodeum and abdominal tergites I & II, *alishanus* sp. n. (a); *luteum* (b). Head, *alishanus*, sp. n. (c); *luteum* (d). Abdomen, *luteum* (e); *alishanus*, sp. n. (f). Front wing, *luteum* (g); *alishanus*, sp. n. (h).

Key to the Taiwan Species of Spilopteron

Face obscurely punctate, not separated from clypeus; body black, with light brown to brown markings; front wing about 10 mm. long.....*alishanus*, n. sp.

Face deeply and coarsely punctate, separated from clypeus by a distinct transverse ridge; body entirely fulvous; front wing about 16 mm. long.....*luteum* UCHIDA

Spilopteron alishanus, new species

♂: Front wing (fig. 8, h) about 10 mm. long. Head in dorsal as in fig. 8, c; face shallowly moderately punctate, without a median carina; clypeus flattened, sparsely, shallowly punctate, about 0.44 as long as wide, not separated from face by a transverse ridge, with an apical median tubercle, its apical margin not sharp; vertex shallowly, coarsely and moderately densely punctate; temple with much sparser punctures; mesopleurum shallowly, sparsely, finely to coarsely punctate; lateral carina of scutellum strong, present only on basal 0.3±; propodeum as in fig. 8, a; ventral swelling of abdominal segment I (fig. 8, f) convex, with numerous long hairs.

Black. Mouthparts except mandibular teeth, scape and pedicel in front, flagellum except for paler annulus beyond middle, face, frons laterally, malar space, temple except posterior 0.4, tegula, mesepimeron, scutellum, postscutellum, legs except front coxa ventrally and most of hind coxa, and the joint between second trochanter and femur of hind leg, brownish to dark brown; abdomen reddish brown except that tergite I is black with median part of apex yellow; tergites II and III partially slightly stained with dark brown; wings hyaline with apical margin infuscate, pterostigma dark brown, venation brown.

The name "*alishanus*" refers to its collecting locality: Shihtzulu, Alishan, Taiwan.

Holotype: ♂, Shihtzulu (=Jujiro), 26-IV-1931, T. SHIRAKI (Taipei).

Spilopteron luteum UCHIDA

Acoenitus luteus UCHIDA. 1930. Insecta Matsumurana 4:126. ♀. des. Type: ♀, Taiwan: Wulai (Sapporo).

Arotes luteus UCHIDA. 1932. Jour. Faculty Agr. Hokkaido Imp. Univ. 33:141. syn.

Siphimedia lutea CUSHMAN. 1933. Insecta Matsumurana 8:12. syn.

Siphimedia lutea UCHIDA, 1934. Insecta Matsumurana 9:52. ♀. key.

Siphimedia lutea SONAN, 1936. Trans. Nat. Hist. Soc. Formosa 26:240. ♂, ♀. Taiwan: Hsiaolin (=Kobayashi); Shinchu; Hwalien, 1000-3000 m.; Suiyuan (=Suógun), 1500 m. (in part).

Spilopteron luteum TOWNES, TOWNES and GUPTA, 1961. Mem. Amer. Ent. Inst. 1:325. syn.

♂,♀: Front wing (fig. 8, g) about 14 mm. long. Head in dorsal view as in fig. 8, d; face deeply, densely and coarsely punctate, distinctly punctato-striate centrally; upper 0.4 of face with a low longitudinal carina; clypeus about 0.6 as long as wide, separated from face by a distinct, transverse ridge, its basal 0.6 sparsely, coarsely punctate; exposed portion of labrum about 0.5 as long as wide; vertex moderately

sparsely punctate; temple with sparser, various sized punctures; mesopleurum deeply, coarsely, densely punctate except speculum and mesepisternum impunctate; scutellum deeply densely punctate, its apical 0.4 distinctly striate; lateral carina of scutellum extending to apical 0.4; propodeum as fig. 8, b; ventral swelling of abdominal segment I convex with a few long hairs (fig. 8, e); subgenital plate distinctly, densely and finely punctate, far surpassing abdominal apex, about 3.0 as long as tergite II; ovipositor tip smooth.

Light fulvous. Flagellum infuscate apically; mandibular teeth dark brown; joint between second trochanter and femur of hind leg, and apex of subgenital plate, brownish; wings and pterostigma yellowish brown; venation dark brown; apical margin of front wing darker.

Specimens: ♀, Hsiaolin, Lotung (=Kobayashi, Rato), 20-VIII-1923, J. SONAN; 3 ♀, ♂, Hwalien (=Karenko), 20-VI to 4-VIII-1919, T. OKUNI, J. SONAN, K. MIYAKE and M. YOSHINO; ♀, 26-VII-1932, M. YOSHINO; ♀, Lingtien, Hwalien, 17-VII-1955, M. Y. TANG; ♀, Liying (=Tuttaka), 2-IX-1940, J. SONAN; ♀, Lotung (=Gaogan), 17-VII-1938, J. SONAN; 2 ♀, Shinchu (=Shinchiku), 1 to 30-VII-1918, J. SONAN & K. MIYAKE; ♀, Suaoshuiyan (=Suosuigen), 24-VIII-1930, J. SONAN; ♀, Taipei (=Rahau, Taihoku), 13-VII-1939, J. SONAN; ♀, Taipingshan (=Hukurei, Taiheizan), 20-VII-1938, J. SONAN; ♀, Wulai (Urai), J. SONAN. All in Taipei collection.

Genus **Yamatarotes** UCHIDA

Pseudarotes UCHIDA, 1929. Insecta Matsumurana 3:179. Type: *Pseudarotes chishimensis* UCHIDA. Original designation.

Yamatarotes UCHIDA, 1929. Insecta Matsumurana 3:180. Type: *Yamatarotes bicolor* UCHIDA. Original designation.

Pseudarotes MEYER, 1930. Ann. Mus. Zool. Acad. Sci. URSS 31:175. Name preoccupied by UCHIDA, 1929. Type: *Pseudarotes filipjevi* MEYER. Original designation.

Pararotes MEYER, 1934. Tables systématiques des hyménoptères parasites (fam. Ichneumonidae) de l'URSS et des pays limitrophes 3:271. New name for *Pseudarotes* (MEYER.)

Upper tooth of mandible a little shorter than lower tooth; clypeus without a median subapical tubercle, its apical 0.6 rather flattened and apical margin sharp; frons with a strong longitudinal median carina; notaulus fading out without coming together; intercubitus opposite or almost opposite second recurrent vein; nervellus broken a little above the middle; all tarsal claws with an acute accessory tooth at the midlength on the mesal side; first sternite with a few long erect hairs.

Yamatarotes convexus, new species

♀: Front wing (fig. 9, c) about 13 mm. long. Head in dorsal view as in fig. 9, d; face sparsely and finely punctate, the punctures larger and denser on central part, upper 0.3 of face with a strong longitudinal median carina; clypeus about 0.68 as long as wide, with basal 0.5 polished, sparsely punctate, with about 18 punctures, its

apical 0.5 depressed, very finely and sparsely punctate, the apical margin semi-circular and sharp; exposed portion of labrum about 0.3 as long as wide; malar space about 0.9 as long as basal width of mandible; frons convex, with a sharp longitudinal, median carina that connects with facial median carina; vertex and temple finely punctate; mesopleurum distinctly elevated between upper 0.3 and middle, variously punctate except middle 0.3 smooth and lower part more or less rugoso-punctate; scutellum distinctly roundly elevated, lateral carina absent, basal 0.3 with a longitudinal median groove; propodeum well carinated (fig. 9, a), polished except latero-basal area sparsely punctate; abdominal tergite I about 2.3 as long as apical width, its basal 0.4 strongly curved downward; ventral swelling of abdominal segment I subangular in profile, (fig. 9, b) with a few long hairs; latero-basal 0.25 of tergite II with an oblique furrow extending to middle of lateral side of the tergite; subgenital plate very finely punctate, far surpassing abdominal apex, about 2.0 as long as tergite II; ovipositor tip broken off.

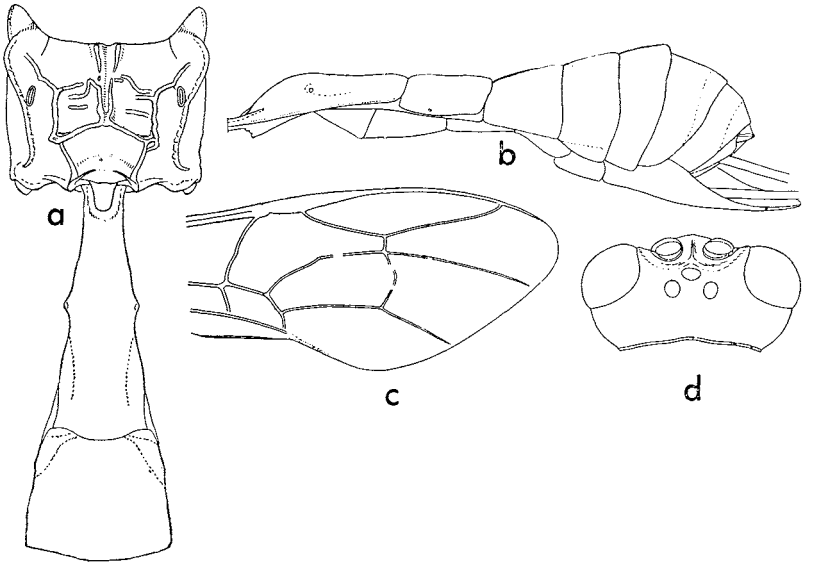

Fig. 9. *Yamatarotes convexus* sp. n. Propodeum and abdominal tergites I & II (a); abdomen (b); front wing (c); head (d).

Fulvous. Two oblique stripes on face below each antennal socket that extend to basal margin of clypeus, mandibular teeth, lower 0.3 of frons, a tiny spot adjacent to lateral ocellus, mark covering hind central part of hind slope of vertex and all of occiput, transverse band in scrobe of pronotum, 3 stripes on mesoscutum, depression in front of scutellum, posterior margin and two horizontal stripes on mesopleurum, prepectus, mesosternum, metasternum, basal margin and baso-lateral area of propodeum, basal 0.25 of hind coxa, basal 0.4 of abdominal segment I, centro-basal margin and oblique furrow of tergite II, and two oblique marks on baso-laterally of tergites III and IV, brown to blackish; wings with yellowish brown tinge, venation

and pterostigma dark brown.

The name "*convexus*" means convex, referring to its high scutellum.

Holotype: ♀, Neipenpu (=Naihumpo), 9-IX-1924, T. SHIRAKI and J. SONAN (Taipei).

Genus **Ishigakia** UCHIDA

Ishigakia UCHIDA, 1928. Jour. Faculty Agr. Hokkaido Imp. Univ. 25:32.
Type: *Ishigakia exetasea* UCHIDA. Original designation.

Upper tooth of mandible slightly shorter than lower tooth; clypeus somewhat flat, with apical half depressed and apical margin sharp; notaulus moderately deep and convergent; prepectal carina present on ventrally and lower lateral part of mesopleurum; areolet absent; intercubitus distad of second recurrent vein by about 1.2 its length; nervellus broken far above middle; front and middle tarsal claws with an accessory tooth, hind claws simple; ovipositor tip almost smooth.

Ishigakia exetasea UCHIDA

Ishigakia exetasea UCHIDA, 1928. Jour. Faculty Agr. Hokkaido Imp. Univ. 25:33. ♂. des., fig. Type: ♂, Ryukyu Is.: Ishigaki (Sapporo).

♂,♀: Front wing (fig. 10, b) about 12.5 mm. long. Head in dorsal view as in fig. 10, c; face deeply, coarsely and densely punctate, its upper 0.3 to 0.5 with a broad, low median carina; clypeus about 0.5 as long as wide, basally defined by a transverse ridge, its basal 0.5 sparsely coarsely punctate, apical 0.3 distinctly depressed, finely or weakly punctate, sometimes with very fine, transverse striae, its apical margin semi-circular; exposed part of labrum about 0.33 as long as wide; frons concave with

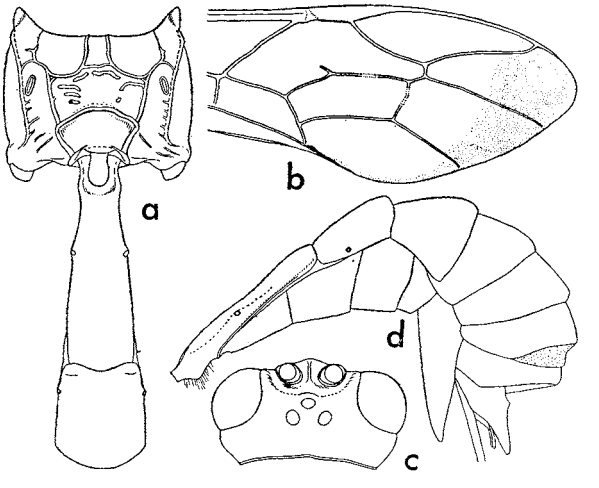

Fig. 10. *Ishigakia exetasea* UCHIDA. Propodeum and abdominal tergites I & II (a); front wing (b); head (c); abdomen (d).

a few distinct low transverse to oblique striae; median carina on frons rather low, its apex connected with facial median carina; vertex and temple finely and sparsely punctate; mesoscutum densely moderately punctate; mesopleurum deeply, finely to coarsely punctate; scutellum weakly convex, finely punctate, lateral carina absent; propodeum (fig. 10, a) carinate and punctate except that petiolar area is smooth; abdominal segment I about 2.7 as long as its apical width, its spiracle before middle; ventral swelling of abdominal segment I with numerous long erect hairs; subgenital plate finely punctate, not surpassing abdominal apex (fig. 10, d); ovipositor shaft with widely spaced weak transverse ridges on lower valve, the tip area smooth except for a pair of transverse ridge on subapical part.

Yellowish brown. Antenna except scape and pedicel in front, sometimes inner side of flagellum, mandibular teeth, lower part of frons, ocellar area, dorsal 0.5 of posterior part of mesopleurum (usually lower part not brown), depression in front of scutellum, basal margin of propodeum and first lateral area, margin of metapleurum except on ventral side, dorso-lateral stripe on hind coxa or sometimes much of hind coxa, joint between hind trochanter and femur, hind tarsal segments, abdominal tergite I except baso-medial 0.4 and apical 0.3, basal 0.6 of tergites II to IV, and approximately basal 0.5 of tergites V and VI, light brown to dark brown; wings light fulvous, with apical margins darker, pterostigma fulvous, venation dark drown. The female from Tachia (=Mt. Taiko) has rather extensive dark brown areas on metapleurum, ventral side of metathorax, hind coxa, hind femur, and abdominal segments.

Specimens: ♀, Tachia (=Mt. Taiko), 23-IV-1923, MASAYO KATO (Taipei); ♀, Alishan (=Arisan), 18 to 22-VI-1958, S. C. CHIU (Taipei); ♀, Taipei, X-1965, K. S. LIN (Taipei); ♂, Yangminshan (=Sozan), 8-V-1938, J. SONAN (Taipei); 2♂, Pahsienshan (=Hassenzan), 23-V-1932 and 23-VI-1934, J. L. GRESSITT (TOWNES).